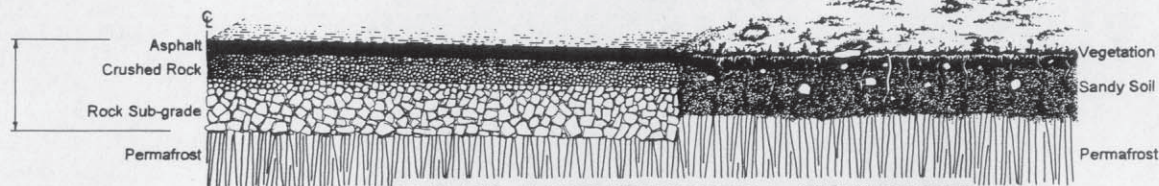
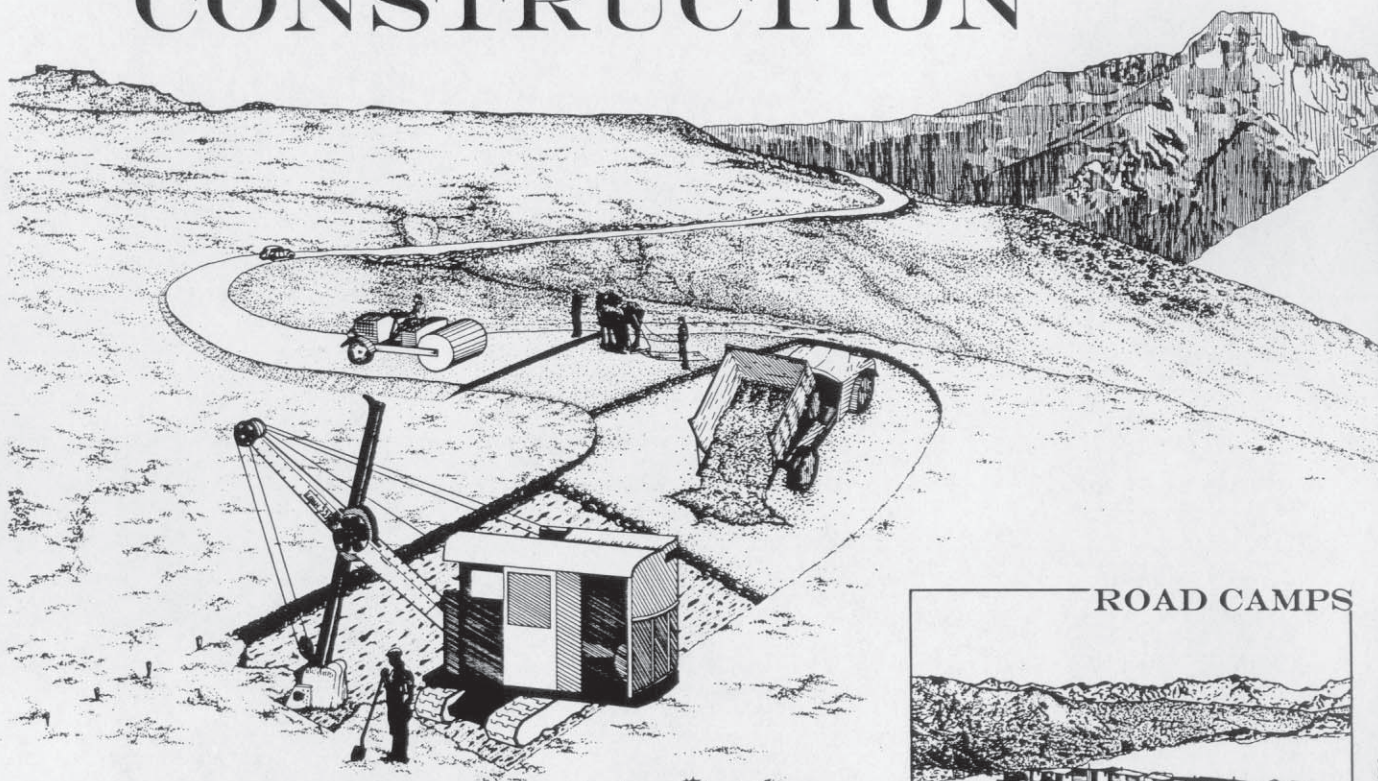


HIGH-ALTITUDE CONSTRUCTION

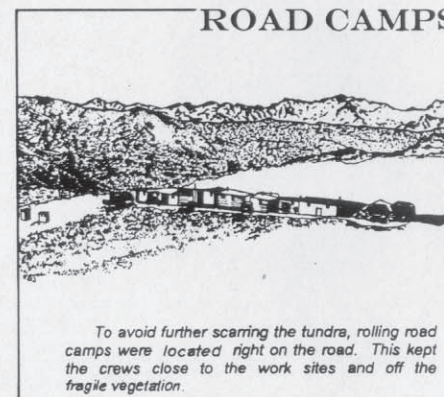
More than eight miles of Trail Ridge Road lie at least 11,000' above sea level; three miles are above 12,000'. Above treeline, the road crosses an open tundra landscape underlain by perpetually frozen soil called permafrost usually only encountered north of the Arctic Circle. In contrast to the tortuous climb up from the valleys below, the high elevation sections were designed with easy slopes and gentle curves sweeping across the landscape, offering spectacular views down Forest Canyon and the Fall River Valley. Close at hand on either side are many of the highest peaks of the northern Rockies.

Construction of the road through this harsh and ecologically sensitive landscape presented challenges rarely encountered in traditional roadway construction. Construction crews working in this section were routinely confronted by harsh weather conditions. Road-obliterating landslides and heavy snowdrifts hampered the work. Violent electrical storms and hurricane-force winds often forced crews down the mountain. Freezing temperatures and blinding snowstorms could occur at any time, even in the summer months. Compounding these problems was the lack of oxygen at the higher altitudes, making the hard work even more difficult.

One of the greatest challenges was constructing the roadway across the alpine tundra and permafrost, an extremely delicate ecosystem that develops at a rate of about an inch every hundred years. Normal drills would not penetrate the frozen material, and special equipment had to be designed. The thinner areas could be stripped away like sod or melted by exposure, but where it was deep, disturbance had to be minimized. The deeper parts below the surface could not be allowed to melt, or the area would turn into a permanent quagmire. Here the upper sections were carefully removed, then a prepared roadbed was constructed on rock fill resting directly atop the frozen soil. The tundra sod that had been salvaged was then used to cover the roadbanks scarred during construction.



ROAD AND TUNDRA SECTION



DEVELOPED BY: Christopher A. Boldt, 2000

NPS PARK ROADS

RECORDING PROGRAM

UNITED STATES DEPARTMENT OF THE INTERIOR

ESTES PARK VICINITY

ROCKY MOUNTAIN NATIONAL PARK ROADS - 1920/1932

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